Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-63 (canceled)

64 (previously presented): A system for detecting a macromolecular analyte comprising:

a removably insertable rigid and structurally self-supporting probe having a sample presenting surface for presenting the macromolecular analyte to a laser desorption ionization energy source that emits energy capable of desorbing and ionizing the macromolecular analyte from the probe, wherein at least the surface comprises a non-metallic material selected from the group consisting of polystyrene, polypropylene, polyethylene, polycarbonate, nylon, starch, agarose, and dextran;

a laser desorption ionization energy source that directs laser energy to the sample presenting surface of the probe for desorbing and ionizing the macromolecular analyte;

a spectrometer tube;

a vacuum means for applying a vacuum to the interior of said tube;

electrical potential means within the tube for applying an accelerating electrical potential to the desorbed and ionized analyte;

a detector in communication with the probe surface that detects the desorbed macromolecular analyte; and

means for detecting the mass of the ions by their time of flight.

65-85 (canceled)

86 (previously presented): A method for detecting a macromolecular analyte comprising the steps of:

a) providing a system comprising:

(1) a removably insertable rigid and structurally self-supporting probe having a sample presenting surface for presenting the macromolecular analyte to a laser desorption ionization energy source that emits energy capable of desorbing and ionizing the macromolecular analyte from the probe, wherein at least the surface comprises a non-metallic material selected from the group consisting of polystyrene, polypropylene, polyethylene, polycarbonate, nylon, starch, agarose, and dextran, wherein the macromolecular analyte is presented on the probe surface;

(2) a laser desorption ionization energy source that directs laser energy to the sample presenting surface of the probe for desorbing and ionizing the macromolecular analyte;

(3) a spectrometer tube;

(4) a vacuum means for applying a vacuum to the interior of said tube;

(5) electrical potential means within the tube for applying an accelerating electrical potential to the desorbed and ionized analyte;

(6) a detector in communication with the probe surface that detects the desorbed and ionized macromolecular analyte; and

(7) means for detecting the mass of the ions by their time of flight;

b) desorbing and ionizing at least a portion of the macromolecular analyte from the surface by exposing the macromolecular analyte to energy from the laser desorption ionization energy source;

c) accelerating the desorbed and ionized analyte toward the detector;

d) detecting the desorbed and ionized macromolecular analyte with the detector; and

e) detecting the mass of the ions by their time of flight.

87 (canceled)

88 (previously presented): The method of claim 86 further comprising before step (b) the step of modifying the macromolecular analyte chemically or enzymatically while deposited on the probe surface.

89 (previously presented): The method of claim 86 further comprising after step (c) the steps of:

d) modifying the macromolecular analyte chemically or enzymatically while deposited on the probe surface; and

e) repeating steps b) and c).

90 (previously presented): The method of claim 86 wherein the probe surface comprises an array of locations, each location having at least one macromolecular analyte deposited thereon; and step (b) comprises desorbing and ionizing a first macromolecular analyte from a first location in the array;

and wherein the method further comprises the step of:

d) desorbing and ionizing a second macromolecular analyte from a second location in the array; and

e) detecting the desorbed and ionized second macromolecular analyte with the detector.

91-100 (canceled)

101 (previously presented): The method of claim 86 wherein the macromolecular analyte comprises a protein or a peptide.

102-107 (canceled)

108 (previously presented): The system of claim 64, wherein the macromolecular analyte is a biomolecule.

109 (previously presented): The system of claim 64, wherein the macromolecular analyte is a biomolecule from an undifferentiated sample.

110 (previously presented): The system of claim 64, wherein the macromolecular analyte is a protein or a peptide.

111 (previously presented): The method of claim 86, wherein the macromolecular analyte is a biomolecule.

112 (previously presented): The method of claim 86, wherein the macromolecular analyte is a biomolecule from an undifferentiated sample.

113 (previously presented): The method of claim 86, wherein the macromolecular analyte is a protein or a peptide.

114-120 (canceled)

121 (previously presented): The system of claim 64, wherein the macromolecular analyte is a nucleic acid.

122 (previously presented): The system of claim 64, wherein the macromolecular analyte is a carbohydrate.

123 (previously presented): The method of claim 86, wherein the macromolecular analyte is a nucleic acid.

124 (previously presented): The method of claim 86, wherein the macromolecular analyte is a carbohydrate.

125 (canceled)

126 (previously presented): The system of any of claims 64 or 137-141 further comprising applying to the macromolecular analyte a matrix material for promoting desorption and ionization of the macromolecular analyte on the surface.

127 (previously presented): The method of any of claims 86, 88-90, 101, 111-113, 123, 124 or 144-148 further comprising applying to the macromolecular analyte a matrix material for promoting desorption and ionization of the macromolecular analyte on the surface.

128-136 (canceled)

137 (previously presented): The system of claim 64 wherein the non-metallic material is polystyrene.

138 (previously presented): The system of claim 64 wherein the non-metallic material is polypropylene.

139 (previously presented): The system of claim 64 wherein the non-metallic material is polycarbonate.

140 (previously presented): The system of claim 64 wherein the non-metallic material is nylon.

141 (previously presented): The system of claim 64 wherein the non-metallic material is dextran.

142-143 (canceled)

144 (previously presented): The method of claim 86 wherein the non-metallic material is polystyrene.

145 (previously presented): The method of claim 86 wherein the non-metallic material is polypropylene.

146 (previously presented): The method of claim 86 wherein the non-metallic material is polycarbonate.

147 (previously presented): The method of claim 86 wherein the non-metallic material is nylon.

148 (previously presented): The method of claim 86 wherein the non-metallic material is dextran.